

Application Number: 10/519,216  
Reply Dated: October 3, 2008  
Office Action Dated: June 3, 2008

### **REMARKS**

This amendment is responsive to the Office Action dated June 3, 2008 for which a three (3) month period of response was given. A Petition and fee for a one (1) month extension of time accompany this paper. However, should an additional extension of time and/or any further additional claim fees be due, the Commissioner is hereby authorized to treat this paper as a Petition for any needed extension of time and to charge any fees due to Deposit Account No. 50-0959, Attorney Docket No. 089498.0436.

Claims 1 and 3 through 19 are pending in the present application. Claim 2 was previously cancelled. Claims 1 and 3 through 19 have been amended. Support for the amendments to claims 1 and 3 through 19 can be found in the specification as filed. Accordingly, no new matter has been added. As such, entry and consideration of the amendments to the claims is believed due and is respectfully requested.

Applicants undersigned attorney would like to thank the Examiner for the acknowledgement of the allowability of the subject matter of claims 4, 10, 12, 14 and 16 through 19, if rewritten into independent format. Given this, claims 4, 10, 12, 14, 16, 18 and 19 have been amended into independent format. Accordingly, it is believed that claims 4, 10, 12, 14 and 16 through 19 are now in condition for allowance. As such, confirmation of the allowability of claims 4, 5, 10, 12, 14 and 16 through 19 is believed due and is respectfully requested.

#### **I. The 35 U.S.C. § 102 Rejections**

Claims 1, 3, 5, 8, 9, 11 and 13 have been rejected under 35 U.S.C. §102(b) over Tennent et al. (U.S. Patent No. 6,099,960). Initially, it is believed that claim 5 should not be included in this rejection as claim 5 depends directly from claim 4. Since claim 4 has only been objected to and has not been rejected in view of any currently applied art, claim 5 is believed to contain allowable subject matter as well.

As is noted by the Examiner, Tennent et al. discloses a nanofiber comprising carbon. Specifically, Tennent et al. discloses the nanofiber as being functionalized so that it may immobilize active groups. Such groups may be enzymes, antibodies, or antigens.

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However, as is clearly disclosed therein, the functionalization of the carbon nanofibers of Tennent et al. occurs only on the surface thereof (emphasis added – see column 9, line 65 to column 10, line 23).

On the other hand, as is specified in claims 1 and 11, the at least one functional group to which a protein is attached is contained within a portion of the fiber-forming material (emphasis added). As would be appreciated by those of ordinary skill in the art, the words “on” and “contained within” have markedly different meanings. For example “on” means “so as to be or remain supported by or suspended from.” On the other hand, “contained within” means “in or into the interior or inner part; inside.”

Given the above, the protein attachment utilized by the present invention is performed via formation of chemical covalent bonds between the protein and functional groups exposed to the fibers. The functional groups are thus an integral part of the polymer that forms the fiber, with its roots inside the fiber and its reactive portion pointed outside the fiber, achieving permanent attachment. As such, the functional group itself is contained within a portion of the fiber-forming material.

Given the subject matter of pending claims 1, 3, 8, 9, 11 and 13, Tennent et al. fails to disclose each and every feature of claims 1, 3, 8, 9, 11 and 13. Specifically, Tennent et al. fails to disclose, teach or suggest a fibrous protein-immobilization system composition comprised of a nanofiber made from fiber-forming material, a protein, and at least one functional group contained within a portion of the fiber-forming material where such a functional group is designed to attach the protein to the fiber-forming material of the nanofiber.

In light of the above, Tennent et al. fails to disclose each and every element of claims 1, 3, 8, 9, 11 and 13. Thus, Tennent et al. cannot anticipate claims 1, 3, 8, 9, 11 and 13. As such, the novelty rejection of claims 1, 3, 8, 9, 11 and 13 over Tennent et al. is unfounded, and withdrawal thereof is respectfully requested.

Claims 1, 6 through 9, 11, 13 and 15 have been rejected under 35 U.S.C. §102(b) over Iyer et al. (Abstract of Papers, 221st ACS National Meeting, Sand Diego, CA, April 1 to 5, 2001, ANYL-035). From the brief Abstract provided by the Examiner it is apparent that

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the immobilization method disclosed in Iyer et al. relates to the immobilization of enzymes onto surface supports that are formed on the surface of a cellulose nanofibers with carbon nanotube immobilization matrixes.

On the other hand, as is specified in claims 1 and 11, **the at least one functional group to which a protein is attached is contained within a portion of the fiber-forming material** (emphasis added). As would be appreciated by those of ordinary skill in the art, the Abstract of Iyer et al. only discloses immobilization "on" a surface of a nanofiber. As is noted above, the words "on" and "contained within" have markedly different meanings. For example "on" means "so as to be or remain supported by or suspended from." On the other hand, "contained within" means "in or into the interior or inner part; inside."

Given the above, the protein attachment utilized by the present invention is performed via formation of chemical covalent bonds between the protein and functional groups exposed to the fibers. The functional groups are thus an integral part of the polymer that forms the fiber, with its roots inside the fiber and its reactive portion pointed outside the fiber, achieving permanent attachment. As such, the functional group itself is contained within a portion of the fiber-forming material.

Given the subject matter of pending claims 1, 6 through 9, 11, 13 and 15, Iyer et al. fails to disclose each and every feature of claims 1, 6 through 9, 11, 13 and 15. Specifically, Iyer et al. fails to disclose, teach or suggest a fibrous protein-immobilization system composition comprised of a nanofiber made from fiber-forming material, a protein, and at least one functional group contained within a portion of the fiber-forming material where such a functional group is designed to attach the protein to the fiber-forming material of the nanofiber.

In light of the above, Iyer et al. fails to disclose each and every element of claims 1, 6 through 9, 11, 13 and 15. Thus, Iyer et al. cannot anticipate claims 1, 6 through 9, 11, 13 and 15. As such, the novelty rejection of claims 1, 6 through 9, 11, 13 and 15 over Iyer et al. is unfounded, and withdrawal thereof is respectfully requested.

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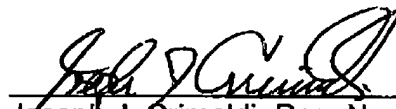
II. Conclusion:

Accordingly, reconsideration and withdrawal of the pending novelty rejections of claims 1, 3, 5 through 9, 11, 13 and 15 is respectfully requested.

For at least the foregoing reasons, claims 1 and 3 through 19 of the present application are believed to be in condition for allowance, and a Notice of Allowance is respectfully requested.

Should the Examiner wish to discuss any of the foregoing in more detail, the undersigned attorney would welcome a telephone call.

Respectfully submitted,



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